**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| IN RE PATENT APPLICATION OF: | Mark W. SYLOR *et. al* |
| FILING DATE: | June 21, 2001 |
| ART UNIT: | 2141 |
| EXAMINER | KRISTIE D. SHINGLES |
| FOR: | LIVEEXCEPTION SYSTEM |

# SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. § 41.37

**Mail Stop Appeal Brief - Patents**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Dear Sir:

In response to the Office Action mailed April 13, 2007 ("the Office Action"), and further to the Request for Reinstatement of the Appeal under 37 CFR § 1.193 filed herewith, Appellants hereby submit the following **Supplemental Appeal Brief** in compliance with 37 C.F.R. § 41.37.

No additional fees are believed to be due. However, the Director is further authorized to charge any additional fees that may be due, or credit any overpayment of same to Deposit Account No. 033975 (**Ref. No. 019287-0317326**).

# REQUIREMENTS OF 37 C.F.R. §41.37

## I. 37 C.F.R. § 41.37(c)(1)(i) – REAL PARTY IN INTEREST

The real party in interest is Computer Associates Think, Incorporated.

## II. 37 C.F.R. § 41.37(c)(1)(ii) – RELATED APPEALS AND INTERFERENCES

There are no related appeals and/or interferences.

## III. 37 C.F.R. § 41.37(c)(1)(iii) – STATUS OF CLAIMS

Pending: Claims 1-14, 16 and 17 are pending.

Cancelled: Claims 15 and 18 have previously been cancelled.

Rejected: Claims 1-14, 16 and 17 stand rejected.

Allowed: No claims have been allowed.

On Appeal: The rejections of claims 1-14, 16 and 17 are appealed.

## IV. 37 C.F.R. § 41.37(c)(1)(iv) – STATUS OF AMENDMENTS

The claims have not been amended subsequent to the final rejection mailed October 25, 2006.

## V. 37 C.F.R. § 41.37(c)(1)(v) – SUMMARY OF CLAIMED SUBJECT MATTER

Generally, network management systems monitor the operation and

implementation of hardware and/or software elements within a communication network to ensure that the performance of the network (and/or the elements therein) is maintained. Typically, network management systems are configured to generate alarms in response to "events" in which the performance and/or load of one or more elements in the network fall outside of predefined limits (as such events may impact the overall performance of the network). However, in conventional systems, alarms may be too sensitive such that events are over reported, or alarms may not be sensitive enough such that events are underreported. Drawbacks associated with the underreporting and/or over reporting of alarms and/or events by network management systems are known (*see, e.g.*, the specification, pgs. 1 and 2). The claimed invention relates to a method and/or computer program that implements an advantageous technique for detecting an event on a network element, and generating alarm in response to the detected event.

A. **CLAIM 1**

One aspect of the invention relates to a method of monitoring an element in a computer network. In some embodiments, the method comprises monitoring a preselected variable relating to said element (*e.g.*, the specification, pg. 10, lines 10-18); defining a threshold for the monitored preselected variable (*e.g.*, the specification, pg. 13, lines 26-28, and pg. 20 line 16-pg. 21 line 8); establishing a sliding window in time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which the monitored variable exceeded the threshold during the sliding window of time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27), wherein the measure of the amount of time during which the monitored variable exceeded the threshold during the sliding window in time includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time (*e.g.*,

the specification, pg. 14 line 24-pg. 15 line 27, and FIG. 5); detecting when the time above threshold value exceeds a predefined_condition window value (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); and in response to detecting when the time above threshold value exceeds said condition window, generating an alarm (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27).

B. **CLAIM 13**

Another aspect of the invention relates to a method of monitoring an element in a computer network. In some embodiments, the method comprises defining a profile for that element, said profile including a plurality of different alarm rules, each of said different alarm rules establishing an alarm test for a corresponding one or more variables (*e.g.*, the specification, pg. 11 line 20-pg. 13 line 5); detecting when the alarm test for any one or more of the plurality of different alarm rules is met (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which at least one of the one or more alarm tests has been met during a preselected prior window of time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27), wherein the measure of the amount of time during which at least one of the one or more alarm tests has been met during the preselected prior window of time includes an aggregation of two or more noncontiguous time intervals during which at least one of the one or more alarm tests has been met during a preselected prior window of time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27, and FIG. 5); detecting when the time above threshold value exceeds a predefined condition window value (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); and in response to detecting when the time above threshold value exceeds said condition window, generating an alarm (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27).

C. **CLAIM 16**

Another aspect of the invention relates to a computer program stored on a computer-readable medium. In some embodiment, the computer program causes a computer system to perform the functions of monitoring a preselected variable relating to an element of a computer network (*e.g.*, the specification, pg. 10, lines 10-18); defining a threshold for the monitored preselected variable (*e.g.*, the specification, pg. 13, lines 26-28, and pg. 20 line 16-pg. 21 line 8); establishing a sliding window in time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which the monitored variable exceeded the threshold during the sliding window of time (e.g., the specification, pg. 14 line 24-pg. 15 line 27), wherein the measure of the amount of time during which the monitored variable exceeded the threshold during the sliding window in time includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time (e.g., the specification, pg. 14 line 24-pg. 15 line 27, and FIG. 5); detecting when the time above threshold value exceeds a predefined condition window value (e.g., the specification, pg. 14 line 24-pg. 15 line 27); and in response to detecting when the time above threshold value exceeds said condition window, generating an alarm (e.g., the specification, pg. 14 line 24-pg. 15 line 27).

D. **CLAIM 17**

Another aspect of the invention relates to a computer program stored on a computer-readable medium. In some embodiment, the computer program causes a computer system to perform the functions of defining a profile for that element, said profile including a plurality of different alarm rules, each of said different alarm rules

establishing an alarm test for a corresponding one or more variables (*e.g.*, the specification, pg. 11 line 20-pg. 13 line 5); detecting when the alarm test for any one or more of the plurality of different alarm rules is met (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which at least one of the one or more alarm tests has been met during a preselected prior window of time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27), wherein the measure of the amount of time during which at least one of the one or more alarm tests has been met during the preselected prior window of time includes an aggregation of two or more noncontiguous time intervals during which at least one of the one or more alarm tests has been met during a preselected prior window of time (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27, and FIG. 5); detecting when the time above threshold value exceeds a predefined condition window value (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27); and in response to detecting when the time above threshold value exceeds said condition window, generating an alarm (*e.g.*, the specification, pg. 14 line 24-pg. 15 line 27).

## VI. 37 C.F.R. § 41.37(c)(1)(vi) – GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL.

Claims 1, 13, 16, and 17 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,182,022 to Mayle *et al.* ("Mayle"). Claims 2-4 and 14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mayle in view of U.S. Patent No. 6,098,195 to Northcott ("Northcott"). Claims 5-12 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mayle in view of U.S. Patent No. 6,397,359 to Chandra *et al.* ("Chandra").

## VII. 37 C.F.R. § 41.37(c)(1)(vii) – ARGUMENT

The rejection of claims 1-14, 16, and 17 constitutes legal error at least because the sections of the cited references that are relied on by the Examiner fail to

disclose, teach, or suggest all of the features of the claimed invention. For instance, the Examiner has rejected each of independent claims 1, 13, 16, and 17 as allegedly being anticipated by Mayle. However, Mayle does not disclose all of the features of these claims. Accordingly, the rejection of these claims should be reversed.

Claims 1 and 16 recite "**wherein the measure of the amount of time during which the monitored variable exceeded the threshold during the sliding window in time includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time.**" Similarly claims 13 and 17 recite "**wherein the measure of the amount of time during which at least one of the one or more alarm tests has been met during the preselected prior window of time includes an aggregation of two or more noncontiguous time intervals during which at least one of the one or more alarm tests has been met during a preselected prior window of time.**" Mayle does not disclose at least these features of the claimed invention.

The Examiner relies on Mayle at column 4 line 36-column 5 line 26, column 7 lines 13-24, and column 8, lines 56-65 as allegedly disclosing features in Mayle that are analogous to the claim features reproduced above. *See* the Office Action, pg. 3. The cited passages of Mayle discuss monitoring one or more network metrics over a sliding time window, and disclose two separate techniques for triggering alarms based on the monitored metric(s). These two separate techniques are refered to at column 4, lines 22-25 as the "duration rule 68" and the "frequency rule 69" (shown in FIG. 2). The Examiner's reliance on these techniques constitutes legal error because neither the duration rule 68 nor the frequency rule 69 disclosed in the cited sections of Mayle are analogous to the claimed feature of measuring an "**amount of time during which the monitored variable exceeded the threshold during the sliding window in time [that] includes an aggregation of two or more noncontiguous**

**time intervals during which the monitored variable exceeded the threshold during the sliding window in time.**"

The duration rule 68 for triggering alarms disclosed in the cited sections of Mayle is illustrated in FIG. 3 and is discussed in Mayle at column 4 line 64-column 65 line 4. FIG. 3 and column 4 line 64-column 65 line 4 of Mayle are reproduced below for convenience.

> As an illustration, collected metrics curve 310 begins exceeding current normal threshold 304 at the collection of metric sample 314. Duration rule 68 requires the collected metrics curve 310 to continue to exceed current normal threshold 304 for a period of time T2 before generating an event. Accordingly, at time corresponding to the collection of metric sample 316 an alarm 62 is generated by event processor 60 of FIG. 1.

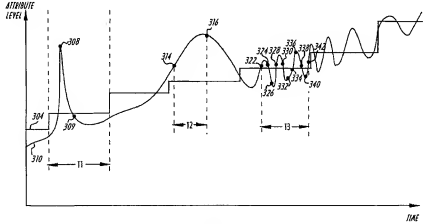


FIG. 3

As should be appreciated from the reproduced sections of Mayle above, the duration rule 68 constitutes monitoring a single, contiguous period of time during which the monitored metric exceeds a threshold and, if the contiguous period of time exceeds a predetermined amount of time, triggering an alarm. The time that the metric exceeds the threshold (*e.g.*, T2 in FIG. 3) is reset if the metric drops below the

threshold. Thus, the duration rule 68 does not anticipate the claimed features reproduced above, which include measuring an "**amount of time ... [that] includes an aggregation of two or more noncontiguous time intervals.**"

FIG. 3 also shows a period of time in which the metric monitored in Mayle vacillates back and forth across the threshold (*e.g.*, during T3). Column 5, lines 5-12 of Mayle teaches that the frequency rule 69 should be used to generate an alarm during this period. Specifically, column 5, lines 5-12 of Mayle read as follows:

> Frequency rule 69 requires the number of collected metrics 310 to exceed current normal threshold 304 a pre-determined number of times N over a pre-determined period of time T3 before generating an event. For example, suppose frequency rule 69 requires the collected metrics 310 to exceed current metric threshold 304 seven or more times over sliding time period T3 before generating an alarm.

From this passage of Mayle, it should be appreciated that the frequency rule 69 includes counting a number of times that the monitored metric breaches the threshold, and generating an alarm when the number of times during reaches a predetermined number. This is disclosed as being useful for generating alarms in instances in which the duration rule 68 does not generate an alarm because the duration rule 68 time period is reset each time the metric falls back below the threshold. *See* Mayle, col. 5, lines 17-26. Merely counting a number of times that the monitored metric breaches the threshold does not take into account the total amount of time spent above the threshold during noncontiguous periods. Thus, the frequency rule 69 described in the cited sections of Mayle does not properly anticipate the claimed features reproduced above, which include measuring an "**amount of time ... [that] includes an aggregation of two or more noncontiguous time intervals.**"

As has been demonstrated above, neither of the techniques described in the cited sections of Mayle for generating alarms based on a monitored metric (*e.g.*, the duration rule 68 and the frequency rule 69) are disclosed as measuring an "**amount**

**of time during which the monitored variable exceeded the threshold during the sliding window in time [that] includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time**." Therefore, the cited sections of Mayle do not anticipate these features of the claimed invention. For at least this reason the rejection of claims 1, 13, 16, and 17 based on the cited portions of Mayle constitutes legal error and should be reversed.

Claims 2-12 depend from claim 1 and claim 14 depends from claim 13. Claims 2-12 and 14 stand rejected based on Mayle in combination with either Northcott or Chandra. However, the cited sections of Northcott and Chandra do not address the deficiencies of Mayle discussed above. Therefore, the rejections of claims 2-12 and 14 based on Mayle in combination with Northcott or Chandra constitute legal error and should be reversed at least based on the dependency of claims 2-12 and 14, as well as for the features that they recite individually.

## VIII. 37 C.F.R. §41.37(c)(1)(viii) - CLAIMS APPENDIX

**Appendix A:** The pending claims (claims 1-14, 16, and 17) are attached in Appendix A.

## IX. 37 C.F.R. §41.37(c)(1)(ix) - EVIDENCE APPENDIX

**Appendix B:** (None)

## X. 37 C.F.R. §41.37(c)(1)(x) - RELATED PROCEEDINGS INDEX

**Appendix C:** (None)

## CONCLUSION

For at least the foregoing reasons, Appellant respectfully requests that the rejection of each of pending claims 1-14, 16, and 17 be reversed.

Date: August 13, 2007

Respectfully submitted,

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## APPENDIX A

## CLAIMS

1. **(Previously Presented)** A method of monitoring an element in a computer network, said method comprising:

monitoring a preselected variable relating to said element;

defining a threshold for the monitored preselected variable;

establishing a sliding window in time;

repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which the monitored variable exceeded the threshold during the sliding window of time, wherein the measure of the amount of time during which the monitored variable exceeded the threshold during the sliding window in time includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time;

detecting when the time above threshold value exceeds a predefined condition window value; and

in response to detecting when the time above threshold value exceeds said condition window, generating an alarm.

2. **(Original)** The method of claim 1 further comprising after generating an alarm, maintaining the alarm at least as long as the time above threshold value exceeds a clear window value.

3. **(Original)** The method of claim 2 wherein said clear window value is equal to said condition window value.

4. **(Original)** The method of claim 3 further comprising:

monitoring a plurality of variables relating to said element, said preselected variable being one of said plurality of variables; and

for each of the plurality of monitored variables, defining a corresponding threshold for that other variable, wherein the time above threshold value is a measure of an amount of time during which any one or more of the monitored variables exceeded its corresponding threshold during the corresponding sliding window of time.

5. **(Original)** The method of claim 1 wherein the step of defining the threshold for the preselected variable comprises:

computing an average value for the preselected variable based on values obtained for the preselected variable over a corresponding prior period;

defining an excursion amount; and

setting the threshold equal to a sum of the average value plus the excursion amount.

6. **(Original)** The method of claim 5 wherein the corresponding period of time is less than a day.

7. **(Original)** The method of claim 6 wherein the corresponding period of time is a particular hour period of a day.

8. **(Original)** The method of claim 6 wherein the step of computing the average comprises computing a mean value for the preselected variable using values obtained for that preselected variable for the same hour period of the same day of the week for a predetermined number of previous weeks.

9. **(Original)** The method of claim 5 wherein the step of defining an excursion amount comprises:

computing a standard deviation for the preselected variable based on values obtained for the preselected variable over a predetermined period of time; and

setting the excursion amount equal to K times the computed standard deviation, wherein K is a positive number.

10. **(Original)** The method of claim 9 wherein the step of computing the standard deviation comprises computing the standard deviation using values obtained for that preselected variable for the same hour period of the same day of the week for a predetermined number of previous weeks.

11. **(Original)** The method of claim 2 wherein the step of defining the threshold for the preselected variable comprises:

defining an excursion amount; and

setting the threshold equal to H less the excursion amount, where H is a positive number.

12. **(Original)** The method of claim 11 wherein the step of defining an excursion amount comprises:

computing a standard deviation for the preselected variable based on values obtained for the preselected variable over a predetermined period of time; and

setting the excursion amount equal to K times the computed standard deviation, wherein K is a positive number.

13. **(Previously Presented)** A method of monitoring an element in a computer network, said method comprising:

defining a profile for that element, said profile including a plurality of different alarm rules, each of said different alarm rules establishing an alarm test for a corresponding one or more variables;

detecting when the alarm test for any one or more of the plurality of different alarm rules is met;

repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which at least one of the one or more alarm tests has been met during a preselected prior window of time, wherein the measure of the amount of time during which at least one of the one or more alarm tests has been met during the preselected prior window of time includes an aggregation of two or more noncontiguous time intervals during which at least one of the one or more alarm tests has been met during a preselected prior window of time;

detecting when the time above threshold value exceeds a predefined condition window value; and

in response to detecting when the time above threshold value exceeds said condition window, generating an alarm.

14. **(Original)** The method of claim 13 further comprising after generating an exception, maintaining that exception at least as long as the time above threshold value exceeds a clear window value.

15. **(Cancel)**

16. **(Previously Presented)** A computer program stored on a computer-readable medium for causing a computer system to perform the functions of:

monitoring a preselected variable relating to an element of a computer network;

defining a threshold for the monitored preselected variable;

establishing a sliding window in time;

repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which the monitored variable exceeded the threshold during the sliding window of time, wherein the measure of the amount of time during which the monitored variable exceeded the threshold during the sliding window in time includes an aggregation of two or more noncontiguous time intervals during which the monitored variable exceeded the threshold during the sliding window in time;

detecting when the time above threshold value exceeds a predefined condition window value; and

in response to detecting when the time above threshold value exceeds said condition window, generating an alarm.

17. **(Previously Presented)** A computer program for monitoring an element in a computer network, said program stored on a computer-readable medium for causing a computer system to perform the functions of:

defining a profile for that element, said profile including a plurality of different alarm rules, each of said different alarm rules establishing an alarm test for a corresponding one or more variables;

detecting when the alarm test for any one or more of the plurality of different alarm rules is met;

repeatedly generating a time above threshold value, said time above threshold value being a measure of an amount of time during which any one or more of the alarm tests has been met during a preselected prior window of time, wherein the measure of the amount of time during which any one or more of the alarm tests has been met during the preselected prior window of time includes an aggregation of two or more noncontiguous time intervals during which any one or more of the alarm tests has been met during the preselected prior window of time;

detecting when the time above threshold value exceeds a predefined condition window value; and

in response to detecting when the time above threshold value exceeds said condition window, generating an alarm.

18. **(Cancel)**

## APPENDIX B

## EVIDENCE APPENDIX

NONE

## APPENDIX C

## RELATED PROCEEDINGS INDEX

NONE